MAMMALOGY.—*Two new wood rats from eastern Utah.*[1] Keith R. Kelson, University of Utah. (Communicated by Herbert Friedmann.)

A study of variation in rodents from the Colorado River drainage of Utah revealed that certain populations of wood rats of the species *Neotoma cinerea* and *Neotoma lepida* were sufficiently differentiated from known subspecies to warrant separation and naming. I am indebted to Stanley P. Young and the U. S. National Museum for the loan of comparative material and to the University of Utah Research Council for financial assistance in obtaining the specimens reported upon here. Unless otherwise indicated, all specimens are in the collection of the Museum of Zoology, University of Utah. Measurements are given in millimeters.

Neotoma cinerea macrodon, n. subsp.

Big-toothed Wood Rat

Type.—Male, adult, skin and skull, no. 4725, Museum of Zoology, University of Utah, east side of the confluence of Green and White Rivers, 1 mile southeast of Ouray, 4,700 feet, Uintah County, Utah; August 21, 1946; collected by Keith R. Kelson, original number 120.

Range.—Known only from the northern edge of the East Tavaputs Plateau, Uintah County, Utah.

Diagnosis.—Size small (see measurements); hind foot small; tail short (ratio of tail length to head-body length averaging 74.7 percent in a series of 4 adult ♂♂). Color (capitalized color terms after Ridgway, *Color standards and color nomenclature,* Washington, 1912): Upperparts Pale Ochraceous-Buff grading to Light Ochraceous-Salmon on cheeks, shoulders and flanks, thinly overlaid with blackish hairs, underparts white; feet white above; tail distinctly bicolored, dusky above and white below except for a buffy basal band, distal two-thirds narrowly edged with buffy-tipped hairs. Skull: Small, moderately angular; frontonasal region slightly arched, moderately channeled above; temporal ridges well developed and widely separated; interparietal broad between temporal ridges, but relatively short; sphenopalatine vacuities large; auditory bullae moderate in size; alveolar length of upper molar series long and individual teeth large; upper incisors weak.

Measurements.—Average and extreme measurements of 4 ♂♂ and measurements of 2 ♀♀, nos. 6660 and 5893 (the latter showing little tooth wear) are, respectively, as follows: Total length, 348.5 (372–333), 330, 292; length of tail vertebrae, 146 (158–139), 140, 120; length of hind foot, 38.3 (40–36), 39, 37; basilar length, 39.2 (42.1–37.6), 37.4, 35.8; length of nasals, 18.3 (20.6–17.1), 16.9, 16.4; length of incisive foramina, 10.5 (11.6–9.7), 9.9, 10.1; length of palatal bridge, 9.0 (9.4–8.5), 8.4, 7.7; zygomatic breadth, 24.1 (26.2–22.5), 23.2, 21.0; alveolar length of upper molar series, 9.8 (10.1–9.6), 9.7, 9.4.

Comparisons.—From *Neotoma cinerea acraia, N. c. macrodon* differs as follows: Tail shorter, hind foot shorter. Color: Generally much lighter, but certain specimens of *N. c. acraia* from the High Plateaus of central Utah are indistinguishable from *N. c. macrodon* in this respect. Skull: Less angular and smaller; frontonasal region less deeply channeled above; cranial roots of the zygomata weaker; sphenopalatine vacuities large as opposed to absent; interparietal usually shorter; auditory bullae less inflated ventrally; upper molar tooth row 7 percent longer; upper incisors less robust.

From *N. cinerea orolestes, N. c. macrodon* differs as follows: Size slightly smaller. Color: Markedly lighter. Skull: Frontonasal region less deeply channeled above; sphenopalatine vacuities slightly larger; upper molar tooth row 8 percent longer; zygomatic arches heavier; frontonasal region more arched.

From *N. cinerea arizonae* which it most closely resembles, *N. c. macrodon* differs as follows: Color: Markedly lighter, being buffy rather than tawny, tail duskier above and bushier. Skull: Similar, except the length of the upper molar series is 16 percent longer in comparable male specimens sphenopalatine vacuities larger.

Remarks.—The presence of large sphenopalatine vacuities indicates that *N. c. macrodon* belongs to the same group of wood rats as *N. c. orolestes, N. c. arizonae,* and *N. c. rupicola.* Specimens are still too few to ascertain the phylogenetic relationships of the new subspecies with other subspecies of the same complex. The pallid color of *N. c. macrodon* is noteworthy since several

[1] Contribution from the Department of Vertebrate Zoology, University of Utah, Salt Lake City, Utah. Received July 25, 1949.

kinds of mammals from the same general region are also noticeably paler than related subspecies elsewhere. This is most apparent in *Perognathus apache caryi* and *Lagurus curtatus levidensis*.

The designation of the bushy-tailed wood rats from the East Tavaputs Plateau (and, presumably, the southern part of the Uinta Basin) as subspecifically distinct leaves a single specimen in the collections of the University of Utah, no. 967, from Castle Valley, 18 miles northeast of Moab, 6,000 feet, Grand County, as the northernmost known record of *N. c. arizonae* in Utah. This specimen closely resembles topotypical and near topotypical specimens of that subspecies. Two specimens from Vernal, Uintah County (U. S. National Museum), and a single skull, no. 7098, sex unknown, from Myton, Duchesne County, show no intergradation with *N. c. macrodon*. These specimens are best referred to *N. c. orolestes*. Both of these localities are on the opposite side of the Green River.

Specimens examined.—Seven, all from Uintah County, Utah: East side of confluence of Green and White Rivers, 1 mile southeast of Ouray, 4,700 feet, 4; Willow Creek, 25 miles south of Ouray, 5,250 feet, 2; Willow Creek 29 miles south of Ouray, 5,400 feet, 1.

Neotoma lepida sanrafaeli, n. subsp.

San Rafael Wood Rat

Type.—Male, adult, skin and skull, no. 6428, Museum of Zoology, University of Utah, Rock Canyon Corral, 5 miles southeast of Valley City, 4,500 feet, Grand County, Utah; June 20, 1948; collected by Keith R. Kelson, original number 522.

Range.—Eastern Utah between the Colorado River and the High Plateaus, north to the Book Cliffs, south to northern Garfield County.

Diagnosis.—Size small (see measurements); hind foot and tail average for the species. Color: Ground color of upperparts Light Buff to Light Ochraceous-Buff with wash of blackish; cheeks, flanks and shoulders Light Ochraceous-Buff; upperparts of feet white; underparts white, with hairs plumbeous basally except on pectoral, and inguinal regions and on a narrow strip of the belly; tail distinctly bicolored, white below except for a buffy basal band, and dusky above, black hairs being mixed with buffy, the former predominating distally. Skull: Comparatively large, ridged, and angular; frontonasal region slightly arched; moderately furrowed above with well developed supraorbital ridges; temporal ridges well developed; sphenopalatine vacuities moderate; palatal bridge long; upper molar series long and wide.

Measurements.—Measurements of the type, and average and extreme measurements of 5 adult ♂♂, and 1 adult ♀, no. 6429, from the type locality are, respectively, as follows: Total length, 312, 288 (312–267), 300; length of tail vertebrae, 128, 119 (128–115), 129; length of hind foot, 34, 31 (34–28). 31; (cranial measurements are based on 4 adult males) basilar length, 34.2, 33.9 (35.1–32.7), 32.8; length of nasals, 15.1, 14.7 (15.1–14.5), 14.7; length of incisive foramina, 8.5, 8.5 (9.1–8.2), 8.3; length of palatal bridge, 7.7, 7.45 (7.7–7.1), 7.7; interorbital breadth, 5.1, 5.3 (5.4–5.1), 5.3; extension of premaxillary tongues posterior to nasals, 3.2 2.8 (3.2–2.4), 2.5; zygomatic breadth, 21.7, 20.9 (21.7–20.3), 20.7; width of brain case, 16.2, 16.0 (16.2–15.7), 16.3; alveolar length of upper molar series, 8.3, 8.2 (8.5–8.0), 8.3; width of upper molar series, 2.3, 2.3 (2.3–2.25), 2.4.

Comparisons.—From *Neotoma lepida lepida*, *N. l. sanrafaeli* differs as follows: Size slightly larger. Color: Many specimens inseparable as to color, but in general, *N. l. sanrafaeli* averages more buffy. Skull: Larger in every measurement taken; more ridged and channeled above; brain case more rounded and inflated.

From *N. lepida monstrabilis* the nearest subspecies, geographically and morphologically, *N. l. sanrafaeli* differs as follows: Color: Averages much lighter (lighter ground color), but certain specimens of the light phase of *N. l. monstrabilis* are similar to some specimens of *N. l. sanrafaeli*. Skull: Larger in all measurements taken except breadth of brain case in which they are equal; skull more ridged and channeled in the frontonasal region; palatal bridge markedly longer (all adult ♂♂ specimens of *N. l. sanrafaeli* measure more than 7.1, while none of 8 ♂♂ from northern Arizona and 20 ♂♂ from Utah exceeded 6.9, the averages being 6.7 and 6.6, respectively) upper molar tooth row longer and wider (8.2 by 2.3 as opposed to 7.8 by 2.1).

Remarks.—In his revision of the genus *Neotoma*, Goldman (North Amer. Fauna No. 31: 1–124, 14 figs., 8 pls. Oct. 19, 1910) ascribed a range to *Neotoma desertorum* that included that part of eastern Utah along the west side of the Colorado River below its junction with the Green River and on both sides of the Green River above

the junction. That part of the range was largely conjectural since it was based on four specimens from Rangely, Colo., and four from the Henry Mountains (Garfield County?), Utah. Subsequently, the name *Neotoma desertorum* was placed in synonomy with *Neotoma lepida* (see Goldman, Journ. Mamm. **13**(1): 59–67. Feb. 1932). In 1932, Goldman (loc. cit.) named the wood rats from northern Arizona and southern Utah *Neotoma l. monstrabilis*. No mention was made of the animals from Rangely, Colo. In 1942, these were still referred to *N. l. lepida* by Warren (*Mammals of Colorado*). The designation of these animals from northwestern Colorado as *N. l. lepida* is doubtful, since the ranges of *N. l. monstrabilis* and *N. l. sanrafaeli* are interposed between the range of *N. l. lepida* and that area.

Specimens in the collections of the Museum of Zoology, University of Utah, from the vicinity of Escalante, Garfield County, are referable to *N. l. monstrabilis*. Two specimens, nos. 308 and 309, from King's Ranch at the western base of the Henry Mountains in Garfield County, are intergrades between *N. l. monstrabilis* and *N. l. sanrafaeli*. In color they resemble *N. l. monstrabilis;* in the majority of diagnostic cranial characters such as length of palatal bridge, length of nasals, length and width of upper molar tooth row, they are closer to *N. l. sanrafaeli*, to which they are here referred. Thus they represent the southernmost known locality of occurrence of *N. l. sanrafaeli*.

The known range of the subspecies herein described is the same as that aseribed to the kangaroo rat, *Dipodomys ordii sanrafaeli* by Durrant and Setzer (*The distribution and taxonomy of the kangaroo rats (genus* Dipodomys*) of Utah*, Bull. Univ. Utah, biol. ser., **9**(3): 1–39, 2 figs., 4 maps. June 30, 1945).

Specimens examined.—Twenty-eight: All from Utah, distributed as follows: *Emery County:* 7 miles north of Green River, 4,100 feet, 2; pump station, 4 miles north of Green River, 4,100 feet, 6; San Rafael River, 15 miles southwest of Green River, 4,200 feet, 6. *Grand County:* Rock Canyon Corral, 5 miles southeast of Valley City; 4,500 feet, 4; 1 mile east of Highway 160, 6 miles south of Valley City, 4,500 feet [= Rock Canyon Corral], 6. *Wayne County:* Notom, 6,200 feet, 2 *Garfield County:* King's Ranch, 5,000 feet, 2.

PROCEEDINGS OF THE ACADEMY AND AFFILIATED SOCIETIES

THE ACADEMY

431ST MEETING OF BOARD OF MANAGERS

The 431st meeting of the Board of Managers, held in the Cosmos Club on October 17, 1949, was called to order by the President, F. H. H. ROBERTS, Jr., at 8:10 P.M. Others present were: F. B. SILSBEE, H. A. REHDER, ALAN STONE, F. G. BRICKWEDDE, W. W. DIEHL, F. M. DEFANDORF, W. N. FENTON, C. L. GAZIN, F. E. JOHNSTON, F. D. ROSSINI, J. B. REESIDE, Jr., F. A. WEISS, C. A. BETTS, R. S. DILL, A. O. FOSTER, H. W. HEMPLE, H. G. DORSEY, O. B. FRENCH, F. M. SETZLER, and, by invitation, J. L. SHERESHEFSKY.

The President announced that he had appointed JOHN F. EMBREE to serve as delegate for the Academy at the celebration of the 150th anniversary of the founding of the Connecticut Academy of Arts and Sciences, at Yale University, New Haven, Conn., on November 4, 1949.

The Chairman of the Committee on Grants-in-Aid for Research, J. L. SHERESHEFSKY, indicaten that only one application for a grant had beed received and that he felt that the restrictions controlling the use of the funds available were such that it was difficult for members of the Academy as well as of the constituent societies to qualify. It was suggested that the Chairman confer with officers of the American Association for the Advancement of Science to ascertain whether any changes had been made with regard to these restrictions.

The Committee on Membership submitted the names of two persons for resident membership in the Academy. Nine nominees previously submitted were elected.

The Board announced a request to place JOHN BRIGHT FERGUSON on the retired list effective December 31, 1949.

H. A. REHDER reported that a complete set of the JOURNAL and PROCEEDINGS of the Academy had been ordered by the library of the Eidg. Technische Hochschule of Zurich, Switzerland. He also reported that 60 copies of Friedmann's monograph *The parasitic cuckoos of Africa* had so far been sold, 12 to persons in foreign countries.

The meeting adjourned at 8:52 P.M.

F. M. SETZLER, *Secretary.*